Signs of CLD:-

- **Hand** → clubbing, palmar erythema, Dupuytren's Contracture, Flapping Tremor, tachycardia.
- **Face** → jaundice, wasting, parotid enlargement & Xanthelasma
- **Chest** → spider naevi (>4 allowed), Gynaecomastia & ↓ axillary hair
- **Abdomen** → shrunken liver, Ascites, Caput medusa, H.S.M
- **Lower limb** → edema & Tibialis Atrophy.

Signs of Decompensated liver disease:-

- Ascites
- Jaundice
- Encephalopathy

Complications of CLD:-

1. Hepatic encephalopathy:- (precipitating factors)

P.P. factors • Diuretics, Diuretics, GI bleeding, vomiting, infection, Surgery, Paracentesis & Electrolytes Imbalance

- **Management:-**
  - Stop Alcohol
  - Treat P.P. factors.
  - Laxative.

2. GI Bleeding (Varices, Congestive Gastropathy & Coagulopathy).

Diagnosis Screening (Endoscopy)

- No varices → Repeat endoscopy every 3-4 year
- Grade I → Repeat every year
- Grade II or III → propranolol 80-160 mg/day
- if propranolol intolerant → Band ligation

Management of Bleeding varices:-

① Resuscitate ② BL. Transfusion. ③ Endoscopy sclerotherapy ④ octreotide
⑤ Endoscopic ligation ⑤ Ballon Tamponade ⑥ TIPS

* Transudate or Exudate *

S.A.A.G

more than 1.1

- Transudate
  - CLD
  - CHF
  - CRF
  - Myxoedema
  - Meigs syndrome.

Less than 1.1

- Exudate
  - Malignancy
  - Infection
  - TB

3] Ascites:

** Causes of Ascites in CLD
- portal HTN (Cirrhosis)
- hypoalbumn
- SBP
- Malignant ascites.

** Manyment:
- Salt restriction (< 2gm/day)
- Spironolactone upto 400mg daily
- Lasix upto 120mg daily
- Ascitic Tapping (Serial)
- TIPS.

- Fluid Restriction if S.Na+ <125mm

4] S.B.P:

** Considered in any patient with Ascites who deteriorated suddenly
** Common organisms: E.Coli, Klebsiella & Strept.
** Diagnosis → Ascitic Tap Neutrophils > 250mm2.
** Treatment:

A] prophylaxis in high risk patient:
(↓Alb, Coagulopathy, ↑Ascitic Albumin).
Norfloxacin 400mg daily till Transplant.

B] Acute management:
- Ceftriaxone 2gm I/V BD
- Tazocin 4.5gm I/V 8h

} Till CLS result

5] Hepato-Renal syndrome (H.R.S):

** Rapid deterioration of K.F.T in patient with Cirrhosis or fulminant Hepatic failure (Type I)
** if Associated with Ascites (refractory) (Type II).
*** Treatment:

Hepatic Transplantation

6] Hepatocellular Carcinoma:

- Diagnosis: US, CT & α fetoprotein.

7] Hepato-pulmonary Syndrome (H.P.S.)

(platypnea)

**** Poor prognosis in liver Cirrhosis ****

... child-Pugh score:

	1 point	2 points	3 points
• T. Bil. (mg/dl)	< 2	2 - 3	> 3
• S. Albumin (gm/dl)	> 3.5	2.8 - 3.5	< 2.8
• INR	< 1.7	1.71 - 2.3	> 2.3
• Ascites	None	mild	Moderate or severe
• Encephalopathy	none	Grade I - II or suppressed with ttt	Grade III - IV or refractory

points	class
5 - 6	A
7 - 9	B
10 - 15	C

** The clue in abdominal Cx's with organomegaly **

** splenomegaly or splenectomy **

* with signs of CLD
  - CLD with portal HTN

yes
- H. Anaemia
  (signs of H. Anaemia)
  - Pallor, Jaundice
  - prominent maxilla
  ± LN

  with LNs
  - lymphoproliferative (+ Pallor)
  - Myeloproliferative
  - Infection (T.B, HIV)
  - Inflammation (Sarcoidosis)

  - Huge spleen
    - CML
    - Myelofibrosis (Dry Tap → BM, Tear drop)
    - Kala Zar (Leishmaniasis)
    - Malaria.

  - mild to moderate
    - early CLD
    - lymphoproliferative
    - Myeloproliferative
    - Infiltration (Amyloidosis)
    - Metabolic

No
* No signs of CLD
  with lymphad
  petty or no

  No LNs

Causes of Hepatomegaly in Thalassemia:

1. Extra-medullary hematopoiesis
2. Iron over Load.
3. Infection

Thalassemia

- F. Hb (Major)
- HbA_2 (Minor)

- patient clinical features of Thalassemia
  - Pallor.
  - Jaundice
  - Prominant maxilla
  - ± LN

Complications of Thalassemia:

1. Anemia
   - HF
   - stunted growth
2. Pigmented GB Stone
3. Infection
   - Encapsulated org. increase with splenectomy.
     - Meningococci
     - H. influenzae
     - Pneumococci.
   - due to repeat Bl. Transfusion
4. Iron overload. may affect
   - liver, spleen
   - Heart
   - Endocrine gland (especially pituitary)
5. Complication of iron chelating agent.
   - Corneal opacity.
   - Agranulocytosis
   - Deafness
   - R.F
   - Arthropathy.
6. Bone deformity

Investigations for Thalassemia

A. Basic

- CBC
  - Agranulocytosis
  - Anaemia
- Bl. film
  - Target cell
  - Hobby jaw bodies (Splenectomy)
- LFT with Albumin & T. Bil.
- Skull x-ray → hair on end appearance.
- R.F.T

B. Diagnostic

- evidence of hemolysis
  - LDH
  - T. Bil
  - Retics
- Hb electrophoresis
  - F. Hb (Major)
  - HbA_2 (Minor)
- Genetic test

C. Complication

- Iron Study (Iron overload).
- pituitary scan (iron deposite).
- alpha fetoprotein (HCC)
- Hepatitis screen (HBV & HCV)
- Abd US.

*Non pharmacological

- PE, PC
- Vaccinations:
  - HBV if surface Ab (-ve)
  - Seasonal influenza yearly
  - pneumococcal 3-5 years
  - If splenectomy
  - H. influenza & meningococcal on 2 (2 week) pre-op

splenectomy

*** Wilson disease:- (Autosomal Recessive)

* it is Genetic disorder characterized by:
  - elevated Copper stored in various body tissue (liver, brain, cornea, etc)

C/P

- Hepatolenticular degeneration (Kayser fleischer ring)
- Chronic Liver disease
- Neuropsychiatric disorders.
- Renal Tubular acidosis
- Cardiomyopathy

*Diagnosis:
- Liver function test
- MRI brain
- serum ceruloplasmin & copper level exam
- liver biopsy
- Genetic testing

Tt:
- Diet: no pharm — low copper containing, reduce copper, cook more
- Medication: chelating agent
  - Trientine
  - D-penicillamine
  - Zinc supplement
  - liver transplant

Treatment of Thalassemia

*Definitive treatment

- B.M.T.
- Repeat BL. transfusion.
  Target Hb 10 g/dL to prevent extramedullary hemopoiesis.
- Genetic Therapy under trial

*treat complication

- Iron chelating agent
- splenectomy.

Indications
1. Hypersplenism, ↑ frequent BL. transfusion > 250 ml/kg/yr
2. Huge spleen causes pressure symptoms.

Types of Iron chelating Agents:

(IV or SC)
Desferrioxamine (Desferal)

infusion over 8 hours for 4-6 night / week

*** Hemochromatosis:-

Iron overload → deposit in
- bronze or gray color skin
- heart → abnormal heart beats, feeling tired
- liver → CLD → cirrhosis
- pancreas → DM
- bone → joint pain (arthritis)
- erectile dysfunction.

Investigations:
- T. sat
- S. ferritin
- LFT
- Liver biopsy
- MRI

Tt:
- non pharm → PE/PC
- pharm. phlebotomy (venesection)

Indications of Hepatic Transplant

Acute Hepatic failure

- Paracetamol induced
  - ⓐ pH < 7.3 24hr after ingestion
  - or
  - ⓑ All of the following:
    - PT > 100
    - Creat > 300 mmol/L
    - Grade III, IV encephalopathy
- Non paracetamol induced
  - ⓐ PT > 100 or
  - 3 out of following
    1. Drug induced LCF
    2. Age < 10 > 40
    3. > 1 week from jaundice to encephalopathy
    4. PT > 50
  - ⓑ Bili ≥ 300 mmol/L

Chronic L.D

- Alcoholic
- PBC
- Wilson
- α_1 AT
- P.S.C

Investigations of C.L.D

A] Basic

- CBC
- LFT (include Alb, INR)
- KFT
- U/S Abdomen

B] Diagnostic

- HCV Ab (PCR)
- HBs ag (PCR)
- Autoimmune studies → ANA, ASMA, LAKMA & SLA
- AMA → P.B.C
- Iron study → hemochromatosis
- Copper, ceruloplasmin → Wilson
- Liver biopsy

C] Complications

- Endoscopy
- α fetoprotein
- U/S
- Ascitic Tapping

Treatment of C.L.D

A] Nonpharmacological

- Stop Alcohol
- PE
- PC
- Nutritional support
- & Vaccination
  - HBV if IgG negative
  - HBV if B_s Ab negative

B] pharmacological

- HCV (new oral antiviral) Sofo + Daclat.
  - if Cirrhosis ± → Ribavirin
- HBV
  - Entecavir, Tenofovir
- Autoimmune.
  - steroid + Immunosuppressive.
- Hemochromatosis
  - venesection
- Wilson → chleating agent
- .... liver Transplantation

C] Complications

(Mentioned Before)

** Renal Transplantation **

* Causes of CKD

... young
- GN
- Infection
- Reflux
- Drugs
- DM
- Congenital

... old
- DM
- APCKD
- HTN
- Analgesic
- Infection
- Drugs
- GN.

* Complication of Renal transplant :-

A] Early :- Surgical.
Infection
Rejection < Hyperacute / Acute

B] Late :-
- rejection
- Infection
- recurrence of by Causes.
- R.A. Thrombosis
- R.V Thrombosis.
- Ureteric stricture.
- leak.
- Drug (Immunosupp) Complications.

Infection — Cancer — Hypertrichosis — DM — HTN

Gum hyperplasia — post transplant lymphoproliferative disorder.

** Renal Case in Abdomen:

① ESRD on HD

Clinical finding

- may be normal abd. or. PCKD. (on Examin Abd).
- signs of active RRT { fistula / Catheter

② Transplanted kid

Clinical finding

- Abd. Scar, abd mass.
- signs of previous RRT (fistula,).
- signs of Immunosupp. Complications.

③ Renal single mass:

- Polycystic kidney
  - AD PCKD
  - AR PCKD
  - Tuberous sclerosis
  - Von Hippel Lindau
- Renal cell Carcinoma
- Angiomyolipoma
- Adrenal mass.
- Retroperitoneal mass

Chest Examination

A] General:-

- **LL:-**
  - → edema ← Cor pulm, malnutrition, Hyp Alb.
  - → impact chest.
- **U.L:-**
  - clubbing → ch. Toxemia (T.B & Cancer), Fibrosis & Bronchiectasis
  - Fine Tremors:- → B_2 agonist
  - Flapping Tremors:- → CO_2 retention.
  - Cyanosis
  - Wasting & Dributyran contraction. ← Cervical rib, Pancoast Tumor
  - Joint deformity:- → R.A,
  - Skin → rich skin, dermatomyositis, syst. sclerosis
  - RR
- **Neck:-**
  - elevated JVP → Cor pulmonale.
  - Trachea.
    - → C.S.N.D → ⊕ } O.A.D
    - → Tuge → ⊕
    - → Central or not
- **Face:-**
  - eye → Pallor, Jaundice & Red eye (2ry polycythemia)
  - lips → Telangiectasia (as Case of lobectomy premonitory)
  - Mouth → cyanosis (Tongue).
  - Parotid gland → enlarged + lung fibrosis → } Sarcoidosis

B] Local:-

- Front
- axillary
- Back

- inspect → expansion, Scar or deformity.
- palpation → expansion, Apex of heart, and HS
- Percussion →
- Auscult.

* Investigation for chest Cases *

A] Basic :-

- CBC, LFT, KFT, ESR & CRP.

B] Diagnostic :-

- CXR
  - → O. A.D → Wide ICS, Flat diaphragm, Ribbon shape heart
  - → Fibrosis → Reticulonodular shadows.
  - → Bronchiectasis → Tram-like appearance.
- HRCT
  - → O A D → Same as CXR + Bullae (pneumothorax)
  - → Fibrosis → Ground glass appearance.
  - → Bronchiectasis → Signet ring appearance.
- P.F.T & Transfare factor (DCLCo)
  - O A D → obstructive patterne. — DCLO
    - ↓ Bronchitis → Normal
    - ↓ emphysema → ↓
    - B. Asthma → ↑
  - Fibrosis → Restrictive + ↓ DCLO
- Sputum CLS, A.f.B & Z-N stain.
- Broncho-alveolar lavage (BAL)
- Biobsy either → Bronchoscopy, V.A.T (Video-Assisted-Thoracoscopy)
- 6 minutes Walk Test → assess ~~lung function~~ Capacity by O2 sat (on walk).
- Contrast CT :- → if Suspected Cancer or Cavity
- Sweat test :- → if Suspected cystic fibrosis

** Bronchial breath **

with (+) whispering

- Scar
  - pneumonectomy
  - lobectomy
- No Scar.
  - Crackles
    - Fibrocavitary
      - Tracheal shift to same side.
    - Consolidation
      - Trachea central.
      - (Infection, Infarction & Cancer) Pneumonitis
  - No crackles.
    - Collapse
      - dullness
    - Cavity
      - Resonance

** Dull Percution **

(No Scar)

- Crackles
  - breath sound
    - Bronchial.
      - Fibrocavity
      - Collapse.
    - Vesicular
      - Bronchiectasis
        - Coarse crackles can be altered by Cough
        - Patient always coughing
      - Fibrosis
        - Fine inspiratory
        - not changed.
- No crackles.
  - pl. Thicking
    - normal air entry
  - effusion
    - diminished or absent
  - Collapse
    - absent air entry

	Pneumonectomy	Lobectomy
1- Chest wall	- Flattening of affected side.	- Localized deformity
2- Chest expansion.	- absent	- Reduced
3- Trachea position.	- deviated to the same side.	- Deviated to same side in upper lobectomy.
4- Breath sound.	- absent.	- Near normal (due to compensatory emphysema).

Causes of Thoractomy:-

- operation of old T.B
- uncontrolled hemoptysis.
- lung cancer (non small cell)
- lung abscess not responding to treatment
- lung reduction surgery
- Bronchiectasis with recurrent hemoptysis

Lung Fibrosis.

(BREAST)

A] Apical.

- Berilliosis, silicosis
- Radiation.
- E.A.A
- Ankylosing spondylitis.
- Silicosis
- T.B

B] Basal.

- Abestosis
- All C.T.D except Ankl
- IPF
- Recurrent chest infection
- Drugs.
  - Amiodarone
  - Methotrexate
  - Nitrofurantoin
  - Bleomycin Cold
  - Busulfan.
- R'h. Arthritis
- SLE
- S. Sclerosis
- M.C.T.D
- Dermatomyositis
- Polymyositis

Causes of unilateral basal fibrosis

- Infection
- Infarction.
- Cancer
- Occupational.
- Drugs.

Investigations:-

A] Basic: CBC, ESR, CRP, ABG

B] Diagnostic:

- CXR → Honeycombing
  - Reticulonodular shadows.
- HRCT → Ground Glass

- pulmonary Function test with DLCO
  Restrictive with ↓ D.C.L.O
- Immunological:
  ANA, ANCA, Anti G. BM & Immunoglobuline level
- Serum ACE level.

C] For Complications:
ECG, Echo → Cor pulmonale

** Management of pul. fibrosis:

A] Non pharm.
- stop smoking.
- P.R.P
- Good Nutrition
- Vaccination

B] pharmacological:
- Treat the Cause or stope Causing drug.
- ~~I.E.O.T~~
- Immunomodulator (Pirfenidone) if F.V.C > 50%
  Recheck after 1 yrs. & stop it
  - F.V.C < 50%.
  - F.V.C reduced > 10% ⇒ start vd
- L.T.O.T Indications:
  @ PaO_2 < 7.3 or
  PaO_2 7.3-8 with
  - Cor pulmonale
  - 2ry polycythemia
  - pul. HTN
  - Nocturnal Hypoxemia

C] Surgical:
Lung Transplantation

* Causes of FibroCavity or Cavity :-

- Infection
  - T.B (Apical)
  - Klebsiella
  - Staph
- Infarction
- Lung abscess
- Cancer (Squamous cell).
- Vasculitis

* Complication of lung Cavity :-

1. Hemoptysis
2. Aspergilloma
3. Recurrent infection
4. Pleural pathology
   - Pneumothorax
   - Hydrothorax
   - Pl. effusion.

Bronchiectasis

Causes of bronchiectasis:-

1. Congenital:- Immotile cilia syndrome
   Kartagener's syndrome.
   Cystic fibrosis
2. Childhood infection:-
   measles
   Pertussis
   Foreign body.
3. Immundeficiency:-
   Hypogammaglobulinemia
   Allergic Aspergillosis.
4. T.B.
5. Malignancy.

Common organisms causes recurrent infection:-

- Pseudomonas
- Hemophilis influenza.
- Streptococcal
- Borkholderia.

** Investigation for bronchiectasis :-

* Basic :- CBC , LFT, CRP, ESR.

* Diagnostic :-

- Laboratory :- - Sputum CLS & AFB & Gram stain
  - ~~Immunoglobulin~~
  - Na+ sweat test
  - Genetic screen for C.F.

- Radiology :-
  - CXR → Tram lines shadows.
  - HRCT → signet ring

- special test :-
  - Bronchoscopy for suspected Cancer.

** Management of Bronchiectasis :-

A] Non Pharmacological :-

- **** Stop Smoking.
- pulm. Rehabilitation (including postural drainage)
- Nutritional support
- Vaccination → annual influenza.
  → H. influenzae (yearly)
  → pneumococcal (3-5y)

B] Medical :-

- Antibiotic for exacerbation
- prophylactic (long term) antibiotics → Tobramycin / Inhaled colistin
- Bronchodilators.
- Inhaled steroid.

C] Surgical :-

- For localized disease.
- As lung reduction Therapy.

Pleural Effusion

A] Exudate

- Infection
- Infarction (Embolism)
- Inflammatory (SLE, Rh arth)
- Infiltration (neoplasm)

B] Transudate

- Cardiac failure
- Renal failure
- C.L.D
- Meigs syndrome.

Light's Criteria for Exudate

pleu fluid / serum protein. > 0.5

PL. fluid / serum LDH > 0.6

PL. fluid. LDH > 2/3 of serum LDH.

Obstructive airway dis.

* B. Asthma *

- Reversible > 20%
- P.F.T obstructive with ↑ DLCo
- ↑ fraction Nitrous oxid in exhaled air.

* C.O.P.D *

(ch. Bronchitis & emphysema)
Irreversible < 12%
obstructive P.F.T
↓ DLCo in emphysema.

*** Complications of O.A.D :-

- pneumothorax.
- Cor pulmonale.
- Recurrent infection
- 2ry polycythemia.
- Resp. failure.

** Manyment of C.O.P.D :-

A] Non pharmalogical:

- stope smoking.
- P.R.P
- Nutritional support.
- Vaccinations: → seasonal influenza.
  → pneumococcal 3-5 yrs.

B] pharmalogical:-

S.A.B.A or S.A.M.A ← ① During attacks
- Bronchodilator, Antibiotics
- steroid
- O2 therapy
± Admission.

② In between attacks:-

③ L.T.O.T

Indications:-

- $PaO_2 < 7.3$

or - PaO_2 7.3 - 8 with

Corpulmonal, 2ry polycythemia,

Pulm. HTN & Nocturnal hypoxia.

(stop smoking)

c] Surgical:-

- Lung Reduction Surgery.
- Bullectomy
- Transplantation

(not Cr. N examin.)

** Neurological Examination **
steps

1. **Screen Exam.** ارفع ايديك , ارفع رجليك ,
   Then procedure to weakness.
2. **Tone** If hypotonia (fasciculation).
3. **Power**
4. **Reflexes** if Hyperreflexia → pathological / → clonus.
5. **Co-ordination:** → لو عملها كويس أديها وهو مغمض
   to R/O sensory lesion.
6. **Sensation** Superficial & deep
7. **Cerebellar** UL & LL weakness, or eye (Nystagmus).
   Finger to nose, or finger to finger.
8. **Gait** → at end.

*Sensory level

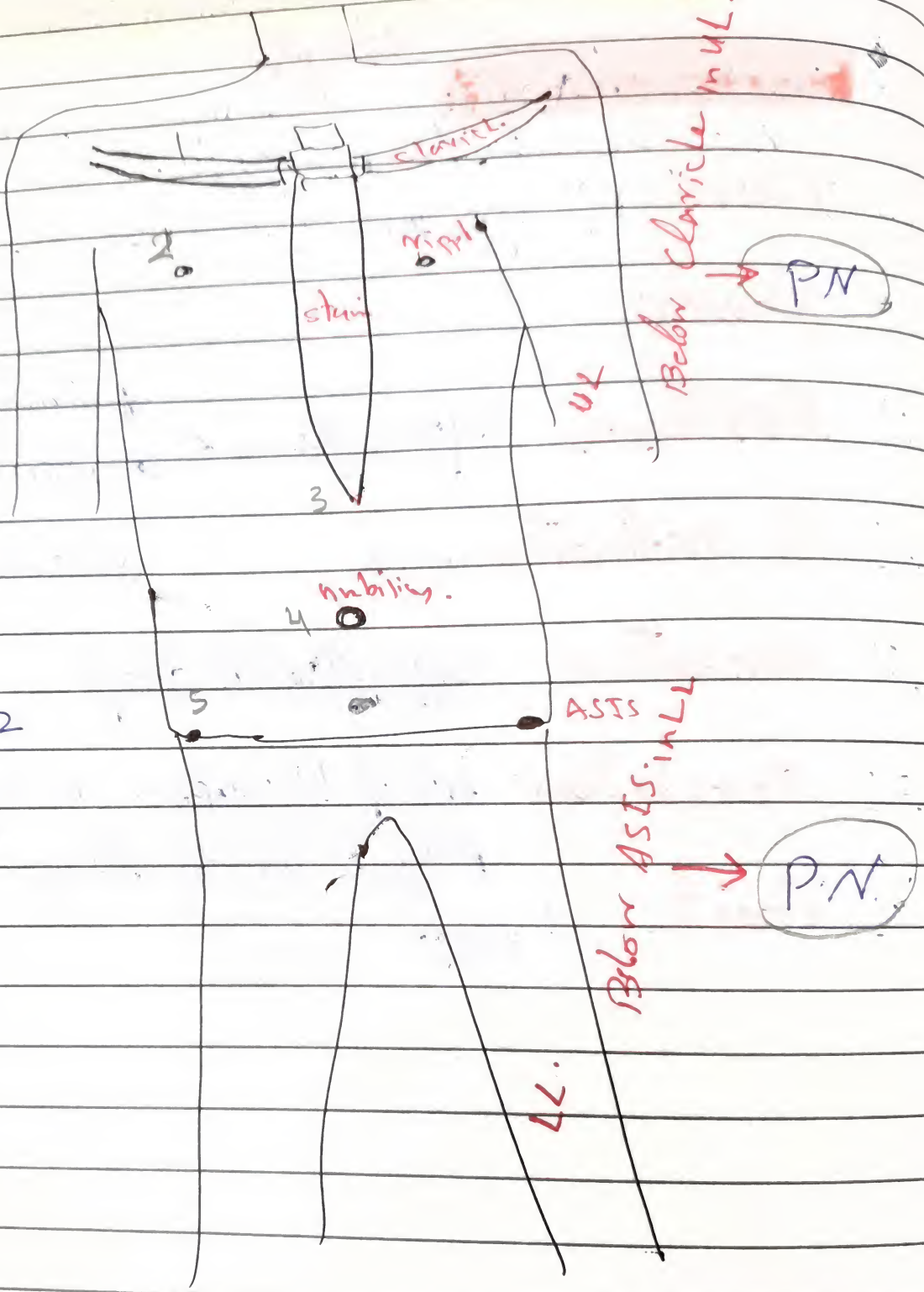
① clavicl → C_4

② Nipple → T_2

③ xeph → T_8

④ umbil → T_{10}

⑤ suprapubic → T_{12}



Types of neurology lesion

A) UMNL.

① Δ tract lesion.

- Hypertonia, Hyperreflexia & Extensor plantar.
- Weakness:

D>P	Abd > Add
upper limb	Ext. > Flex.
Lower limb	Flex > Ext.

** if patient has Hypotonia Hyporeflexia with extensor plantar it mean either → Shock stage
→ Combined lesion.

② Extra Δ lesion:-

- Bradykinesia.
- Rigidity
- Static Tremor.
- Monotone speech.
- Gait (short stepped) shuffling
- Blepharospasm.

③ Cerebellar:-

- Nystagmus
- Dichodokinesia.
- Intention Tremor.
- Dysmetria
- Rebound phenomenon.
- Heel to Shin test.
- Gait

** If UL Examination showed signs of UMNL →

Ask to do planter Reflex.

* Complications of P.N *

- Disability
- Neuropathic ulcer
- charcot joint
- Complication of treatment

* Diagnosis of P.N *

A] Basic:- CBC → Macrocytic B12 def.
LFT → Alcohol
KFT → Uraemia
ESR, CRP → Infection

B] Confirmation:-
N.C.S → Demyelination → Delayed velocity
↳ Axonal → ↓ Amplitude

C] For Causes:-
- RBS → DM
- Vit B12 level → pernicious Anaemia.
- ESR, CRP → Infection
- P-ANCA & C-ANCA → Vasculitis

* Treatment of P.N *

A] Non pharmalogical:-
PE, PC, PT, OC & Foot Care

B] Pain Control:-
Gabapentin or pregabalin —not improve→ Carbamazepine or Amitryptaline
... Duloxetin med only & if no response → stop

C] Complications: charcot joint → Cast & Immobilize for 3-6

B] LMNL

• Weakness D>P Abd>Add
Ext.>Flex.

1] A.H.C (pure motor with normal sensation)

- MND (fasciculation) → Prog. Ms Atrophy (Pure LMN)
- Polio → (Pure LMNL) → Amyotrophic Lt. Scl. (Mixed UMN & LMN)

2] Roots:-

Asymetrical sensory loss (Multiple root lesion)

••• if you find root lesion ask to **exam the back**

3] Peripheral nerves:-

A] Pure motor. PN B] Sensory PN C] Both.

- G.B.S
- CIPD
- AIP
- Lead poisoning.
- Dapson
- Diphteria

(Gloves & stocking) ± deep sensory loss

** Causes of PN

- H.M.S PN
- DM
- Uraemia
- Infection (HIV, Diphterin ... etc) Leprosy)
- Drugs Dapson, INH) Flagyl, Nitrofurin
- G.B.S
- Alcohol.
- B_{12} deficiency
- Vasculitis
- Toxins lead, Arsenic, Organo-p-c

4] N.M Junction & Muscles (pure motor).

• Weakness P>D (except M.D → D>P) → weak hand grip with delayed relaxation
Add>Abd

••• If Add>Abd (weakness) → your diagnose is Ms. disease

Paraplegia with UMNL

D.D

UMNL △

1. **with intact sensation:** (Pure motor).
   - MND (Age > 35) → Amyotrophic L.S / Progressive Ms. Atrophy
   - N.E. to examine UL for cerebellar signs.
   - Asymmetrical → M.S or Vasculitis
   - Symmetrical

Tell exam I'd like to:
- Take family history → H. spastic paraplegia.
- Travel history → Tropical ~ ~
- Do fundus exam → Parasagittal meningioma
- C. palsy (young)

UMNL △

2. **with PN only** → Combined lesions

UMNL

3. **with PN & Dorsal Columns lesion** (Deep sensation):
   - S.A.C.D → B_{12} def. & Vasculitis
   - M.S + PN

UMNL △

4. **+PN + DC + Cerebellar:**
   - F. Ataxia
   - MS + PN.

UMNL △

5. **With Sensory level:-** (Means spinal cord lesion).
   - (A) Loss All modalities (4T + D)
     Transverse myelitis, Trauma, Tumor, T.B & Disc.

+ Sphincter & Bladder & Gait

Paraplegia with sensory level.

Spastic

↓

Precipitancy of micturation

Flaccid

(Acute) Shock

with urine retension

② lost superficial only (intact Deep):

- Chronic → Syringomyelia, Tumor, T.B, Infection
- Acute → A.S.A.D or Trauma.

③ lost Deep (D.C) & intact superficial:

- Tabes Dorsalis
- S.A.C.D → But urgent no P.N (D.C + Δ + P N)
- Vascular myelopathy

Transverse myelitis T.M

Paraplegia with Sensory level

Causes:

- 60% Idiopathic.
- post-infection → Bacterial T.B, $, Brucellosis
  → Viral HS, H2, CMV, HIV
- Inflammatory post vaccinations
- Vasculitis

Investigations:

A] Basic

CBC, LFT, KFT
ESR, CRP

B] Diagnostic

L.P

- Protein ↑ (Immunoglobulin dissociation) → T.M.
- Lymphocytosis → T.B

MRI (Brain & spinal).
Inflamed cord or (Demyelinated plaque in M.S).

Treatment :

A] Non pharmacological :-

- M.D.T, P E, P C, P T, O T, Psychol T
- Cone of 3 Bs (Bowel, Bladder & Bed sores).

B] pharmacological :-

- Systemic steroid +
- plasmapheresis

*N.B In Acute presentation of Paraplegia: Emergency based.

1. Immobilization
2. steroid.
3. MRI.

Complications :-

1. Complications of disability (Bedridden).
   - D.V.T, Bed sores, recurrent UTI & Constipation
2. Depression.

*** Muscles disease ***

... Weakness

- Add > Abd (characteristic)
- P > D (except M.D D > P)

- Waiting face, Normal eye → 1- fascio-scapulo humoral (Aut. Dominant)
- Waiting face, ptosis → M.G
- Normal face & eye movement, scapular → ① - Becker (x-linked) ② - Limbic girdle (Aut. Recessive) ③ - Acquired
- M.D (Aut. Dominant): weak handgrip with delayed relaxation

Character

- ptosis
- Early bladder
- Cataract
- Prominent Maxilla
- check RBS - DM
- ECG may ← A. Block
- Hypotonic face (Weakness & wasting)

Investigations

- Genetic test.
- ECG, Echo
- RBS

N.B : Any patient with Ms disease.

mk to Do :-

① Gower signs.
② Winging of scapula.
③ Exam the heart & pulse.
④ Ask about swallow
⑤ F.V.C

... Investigations.

A] Basic
- CBC
- LFT
- KFT

B] Diagnostic
- Ms. Enzymes ← CPK, LDH, Aldolase.
- E.M.G
- Ms biopsy guided by E.M.G
- Genetic test.

C] for Complication
- ECG & Echo
- RBS
- F.V.C

* Treatment of Ms. disease:-

A] Non pharmacological:-
- M.D.T
- P E
- P C
- P T
- O.T
- Bed ridden care.
  3Bs (Bed Sore, Bowel & bladder)

B] Complications:-
- DM → in M.D
- H. block → M.D by Pacemaker.
- DCMP → Baker disease.

*** Hx of Myotonic phenomenon (delayed relaxation of handgrip).
(phenytoin).

*** M.G treatment
- CT chest (Thymoma)
- EMG → repetitive stimulation → ↓ contra
May Diagnosis by blood test showed
- Acetyl choline receptor Ab or
- Ms specific Tyrosine kinase Ab (MuSk).

Medication:- Mestinon (pyridostigmine)
- Immunotherapy (Azathio (Imuran), Cyclosporin (Neoral), etc).
- plasmapheresis
or Ig

Surgical:- if thymoma. → (Thymectomy)

Hemiparesis

**Causes of hemiparesis:

- Thrombophilic
  - embolism
  - Thrombosis
  - Hge.
- M.S
- Vasculitis
- Encephalitis
- S.O.L (Tumor or Abscess)
- Trauma.

**Clinical Finding:

- Weakness of both on same side UMNL
  - UL → Abd > Add, Ext > Flex; Dist > proximal.
  - LL → Same except Flex > Ext
- Hypertonia (spasticity) ± clonus.
- Hyperreflexia ± pathological reflexes (Patellar, Adductor)
- Ext. plantar (upgoing)
- Circumduction gait

± Impaired sensory modalities.

**look around patient searching for walking Aid.

* Localization of site:

1. **Cortical** : Monoplegia , Coma or Confused , Convulsion
   XX Aphasia , agraphia & Hemianopsia

2. **Capsular**:
   Paraparesis ± paresthesia (7 & 12)
   ± UMN facial lesion, hypoglossal on opposite side.

3. **Brain stem**: (Crossed hemiplegia)
   Crinal LMNL on opposite side of lesion.
   - **Mid brain**
     Oculomotor (3) & Trochelar (4)
   - **Pons** (5) Trigmenal. (8) Vestibulochelar
     (6) Abducent
     (7) Facial (LMNL on opposite side) (All face)
     Same side to lesion
   - **Medulla**
     (9) Glosopharyngeal.
     (10) Vagus
     (11) Accessory
     (12) Hypoglossal.
     on same side to lesion

4. **Spinal Cord above C_2 (hemisection)**
   - Brown-Sequard syndrome.

At the level.
- Ipsilateral: Weakness
- ~~Ipsilateral loss of All sensations~~

Below the level.
- Ipsilat. proprioceptive
- ~~Ipsilat. deep sensory loss~~
- Contralat. superficial sensory loss
- Tract on both sides

*** Hgic Stroke ***

- Conservative follow up.
- Decompression if there is midline shift
- Treat Causes if present.

** Stroke with new AF

Echo → No structural H.D disease → (Valve replacement)
1st ASA, Heparin + Rate Control.
Then 2 weeks later → Anti coagulation.

* * Stroke in patient has valve replacement on Anticoag!

1st → urgent CT Scan

- Hgic Stroke

(Cardiology + Neurology) M.D.T (according to risk/Benefit)
if Hgic → Stop & ↓INR to normal by prothrombin Comp

- Ischemic Stroke:-

M.D.T.

- if risk for Transformation to Hge (Big infarct) stop anti-Coag → give Antiplatelet 1 week then resume
- if No risk for Transformation (small).
Continue & Increase target INR

** Investigations for hemiplegia:-

- A] Basic:- CBC, LFT, KFT

- B] Diagnostic:-
  - CT brain → To R/o Hge.
  - MRI → Ischemic stroke & S.O.L.
  - MRV → to R/o Sinus Thrombosis
  - MRA → R/o Hge & Aneurysm.

- C] For Risk factors:-
  - Lipogram
  - HBA1c
  - ECG
  - Echo
  - Thrombophelia screen.
  - Immunology for vasculitis (P-ANCA & C-ANCA).

* Treatment of hemiplegia:-

A] Non pharmacological:- PE, PC, PT, O.T, Rehabilitation, care of Bowel, Bladder, Bedsores & swallow.

B] Pharmacological

* Acute Ischemic stroke *
↓
- ABCD

Admit to stroke unit:
- Urgent CT scan
- Thrombolytic (window 4.5 hr)
- Thrombectomy (window 6-12 hr).
- ASA 300mg oral. outside window →(2wks) Reevaluation → Risk factor (plavix + statin) / No risk factor: ASA only 75mg + Rx causes

* - Anti-coagulant in case of S.S.T or stroke in evolution.

* 2ry prevention *
↓
- ASA 300mg 2week → then 75mg
-

C] Surgical:-
Carotid endarterectomy → if stenosis 70-99% without Permanent neurological disability after 2 weeks.

** Parkinson's disease **

→ it is a clinical diagnose

- Bradykinesia + > one of → slow Count Finger
- Rigidity (lead pipe or Cog-wheal)
- Tremor.
- postural instability (wide based gait)

*** if suspected A Do (Examine) = speech → staccato or Monotonous. (Ask pt about Full name & Address)

- Hand writing
- Gait → wide base & difficult to turn back.
- synkinesia → repeat Supination & pronation on the normal hand → ↑ Tremor on affected one
- Rebound phenomenon.
- Nystagmus & Intra-nuclear ophthalmoplegia.
- hill to shine test.

B Ask to do:-

- Glabbeler signs
- M.M.S.E
- check Handwriting.
- BP (Supine & standing)
- Supra-nuclear Gaze.
- plantar reflex.

Complications of parkinsonism:-

- Disability
- Depression.
- Dementia
- Drug Complication :- • Tolerance < end dose (on & off phenomenon)
  - Dyskinesia.
  - Memory change.
  - Hallucinations
  - Nausea & Vomiting.
  - Postural hypotension.

** Diagnosis :-

it is aclinical diagnosis But if less then 50 yrs old Do → screen for ~~Wilson disease~~.

... Indications of MRI :-

1. Vascular Parkinsonism.
2. Parkinson plus.
3. Suspected S.O.L.
4. To Rlo Normal pressure Hydrocephalus.

... SPECT study :- it differentiate between parkinson & Essential Tremor

shows ↓ Dense area of substantia Nigra.

** Managment of parkinson disease:-

A] Non pharma :- Rehabilitation, PE, PC, PT, O.T, Social & psychological support.

B] Medical: according to main Complain.

... if Tremor → ~~Anticholenergic~~

**New Guidline..

-- If Rigidity → with Disability: Less dopa & C... (Regression Age).

→ without disability: old → L-Dopa & C...

→ Yong → Dopamine agon...

- if Rigidity →

a) with disability → Dopamin agonist (Reprinole, Bromocriptine, Pramipexole)

b) disability → L-Dopa / Carbi-dopa.

** Adjuvent Drugs:-

Apomorphin

MAO I
↓
selegilline
Rasagilline.

C.O.M.T
↓
Entacapone
Tolcapone.

C] Surgical:-

- Deep Brain stimulation (D.B.S)
- Thalamectomy.
- pallidectomy

** F. Ataxia **

3 Ps + C

- Pyramidal
- posterior Column.
- P.N

- Cerebellar.

** Multiple sclerosis M.S **

** Clinically:-

C — Cerebellar
O — optic
P — pyramidal
D — Lesions. Dorsal Column.

** Investigations:-

A] Basic:- CBC, LFT & KFT

B] Diagnostic:-

- MRI ⟶ Peri-ventricular plague.
- L.P ⟶ oligoclonal band.
- V.E.P ⟶ Delayed Response. (Visual Evoked potentials)
- A.E.P ⟶ Delayed Response. (Auditory Evoked ")

** Mangment:-

A] Non pharma

- PE, PC, PT, OT
- Social & Psych. support
- Care of Bowel, Bladder & Bedsores.

B] pharmacological

① Acute attack:-
- pulse steroid 500-1000mg IV daily for 3-5days.

② Between attacks:-
- Natalizumab (Injection) or
- Fingolimid (oral) 1st dose on monitor side effect Bradycar

N.B
if patient on Interferon or Glutamer Acetate & Controlled.
⟶ Continue on same.

** Valvular heart Lesions **

*** Mitral stenosis (M.S)

* **Causes:**
  - Rh. HD
  - Atrial Myxoma.
  - Congenital.
  - Carcinoid syndrome
  - Methergide Therapy.

* **Symptoms:**
  - S.O.B
  - Palpitation
  - Cough
  - hemoptysis

* **Clinical Findings:**

a) **Non Auscultatory**

- ± AF
- ± ↑ JVP
- ± Tapping apex
- ± (Lt) parasternal heave
- ± palpable P_2
- ± Tender pulsating liver.
- Low volum pulse.
- ± Diastolic Thrill on apex

b) **Ascultatory**

- Accentuated S_1
- ~~± pansystolic murmur~~
- mid-diastolic rumbling murmur best on apex
- ± opening snap.

★ Complication of M.S.:

- ⑮ Atrial dilatation
- Thromboembolism
- pulmonary Congestion
- Endocarditis
- AF
- pulmonary HTN
- Rt v. failure.

★ Signs of Severity of M.S.:

Clinical:

- Early opening Snap
- ↑ duration of murmur
- pul. HTN
- Low pulse pressure
- Graham Steel murmur.

ECH:

★ valve area → Mild > 1.5 Cm^2
→ Moderate 1 to 1.5 Cm^2
→ Severe < 1 Cm^2

★ Indications for surgery:- (Replacement)

① pulmonary Congestion
② pulmonary HTN
③ Hemoptysis
④ Recurrent Thromboembolism Despite anticoagulation.
⑤ M. valve SCor (Mobility, Thickness, Calcification & sub. valvular area.

SCor 4 — 6 — 8 → Replacement
↓ valvoplasty.

if No Contraindications

- L.A Dilatation or Thrombus
- Heavy Calcification
- Double valve lesions (MS/MR)

* Treatment of M.S (not complicated for surgery)

- Diuretics & ACE
- Treat AF
- prophylaxis of I.E in high risk patient & high risk procedure.

** Mitral Regurgitation :- (M.R)

* Causes of M.R :-

* Acute *	* chronic *
- MI (Ischemic)	- Rh. HD ← SLE, R.A
- Trauma	- C.T.D ← Ankylosis
- I.E	- Marfan syndrome.
- ~~Pain~~	- Dilated CMP

* symptoms :-

- S.O.B
- Palpitation

* Clinical Findings :-

* Non Auscultatory *	* Auscultatory *
• Displaced thrusting Apex	• Soft S_1
• ± AF	• Pansystolic murmur radiating to axilla.
• ± syst. thrill on Apex.	• ± S_3

* Complications of M.R

- pulm. HTN (Cor. pulmonale)
- AF
- IE

* Signs of Severity :-

- Thrill
- pulm HTN
- S_3
- shifted Apex
- CHF

* Indications for Surgery :- (Replacement)

- PHTN
- Pul. Congestion.
- ECHO showed: EF < 60
  LVESD > 45
- IE. not response to treatment

* Non surgical treatment of M.R.

- Diuretics & ACE to ↓ pulm. HTN
- Treat of AF
- prophylaxis to IE in high risk patient & high risk procedure.

* In Acute MR with Cardiogenic shock:-

1- Na Nitroprusside → ↓ After Load.

2- Ballon pump → ↓ after Load.
→ ↑ Coronary perfusion.

** Signs of predominant stenosis of Mixed M.V lesion:-

- Accentuated S_1
- Non displaced Apex
- Tapping Apex.
-

** Signs of predominant Regurg of Mixed M.V lesion:-

- Soft S_1
- Displaced apex
- Hyperdynamic apex.
- Thrill.

* M.V.P *

* Causes:-

- Marfan
- Pseudoxanthoma elasticum
- Osteogenesis imperfecta
- Ehler danlos
- HOCM

* clinical signs:-

Mid-systolic click $\xrightarrow{\text{later}}$ M.R

* Investigation:-

ECHO

*** Aortic Stenosis:. (A.S)

* Causes of A.S:

- Congenital / Bicuspid
- sclerosis / Calcification = Aging
- Rheumatic H.D
- Degenerative
- HOCM.

* Symptoms of A.S:- (D.A.S)

- Dyspnea.
- Chest pain (Angina)
- syncope

* Clinical Findings of A.S:-

Non-Auscultation

- Low pulse volume
- slow raising pulse.
- Narrow pulse pressure.
- Heaving Apex
- ± Systolic thrill on Ao. Area. (2nd Rt ICS)
- ± Thrill over 2nd Rt ICS

Auscultation

- ESM on 2nd Rt ICS radiates to neck
- Best heard with expiration with hold breathing.
- ± CHF

* Complications of A.S:-

- CHF
- IHD
- Dysrhythmia.
- I.E

EB

* Signs of Severity of A.S:-

- Pul. HTN
- Heaving Apex
- Long duration of Murmur.
- pul. Congestion.
- Narrow Pulse pressure

* Indications for surgery:- (Replacement)

1- Symptomatic patient (Dyspnea, Angina & Syncope)

2- Asymptomatic patient if:

- with other heart surgery
- Abnormal response of Bp to exercise.
- Non Sustainded V.T
- Echo → Gradiant > 50
  → area < 0.6

Pre-op Cardiac Cath. ←

* Medical mangment of A.S:-

- prophylaxis for I.E
- Treat HF if present.
- Treat Arrhythmias.
- Diuretics. → ↓ pre-load.
- β. blocker → for angina.

*** patient with symptomatic A.S unfit for surgery can be treated by (T.A.V.I) Trans-catheter Aortic Valve Implantation → Tissue valve.

A. stenosis Vs A. sclerosis

- Thrill
- Radiating Murmur to neck

- No Thrill
- Non radiating murmur.

Aortic Regurgitation:- (AR)

Causes of A.R:-

- Acute
  - Dissection
  - Ischemic
  - I.E
  - Trauma.
- Chronic
  - Rh. H.D
  - Ankylosis spondylosis
  - syphilitis
  - Congenital
    - Marfan
    - Ehlers-Danlos
    - Osteogenesis Imperfecta

Symptoms of A.R:-

- palpitation
- S.O.B
- chest pain.

Clinical Findings of A.R:-

Non Auscultatory

- Big pulse volum.
- Water hummer pulse.
- Wide pulse pressure
- Visible Carotid pulsation
- pistol shot femoral
- Duroziez's Signs.
- Thrusting Apex (Hyperdynamic)
- ± Thrill over Aort. Area.

Auscultatory

- Early diastolic Murmur ↑ with leaning forward with full expiration
- ± Aortic flow murmur.

* **Signs of Severity of AR:-**
  - Duration of murmur.
  - Wide pulse pressure.
  - 3rd H.S (S_3).
  - pulm. HTN
  - displaced Apex.

* **Mangment of AR:-**
  - **Medical:**
    - Trent underlying Causes.
    - I.E prophylaxis
    - ACEIs → for HF
      + Diuretics
  - **Surgical (Replacement) indications:-**
    1. Symptomatic (Dyspnea, Angina & syncope).
    2. Asymptomatic if:-
       - Echo → EF < 50%
         → LVESD > 55
       - I.E not responde to Medical Treatment
       - other Heart surgery.

So, Cardiac Cath. pre oper.

* **Signs of predominent AR of Mixed AV lesion:-**
  Murmur of AR, peripheral signs of ARC (collapsing, large volume pulse), Displaced Thrusting Apex.
* **Signs of predominent A-S of Mixed AV lesion:-**
  Murmur of AS, Low volume, slow raising pulse, Non displaced heaving Apex

*** Complications of Valve Replacement:-

- **Early Complications:**
  - operation (Surgical) Complications.
  - I.E with staph Epidiclimis).
- **Late Complications:**
  - Thrombus & Embolization (Anti-coagulant ↓it)
  - Bleeding from over anticoagulation
  - I.E (Staph. Aureus & Streptococcus).
  - Hemolysis → (Anemia & Jaundice)
  - Malfunctioning Valve (surest signs is absent click)
  - Leakage
  - Dehesence.

** Anti Coagulation for Mech. valves **

- only Warfarin. with Target INR 2.5–3.5.
  up to 4 if Associated with AF or previous Stroke.

** In pregnant female:

	* LMWH	* 3month, Warfarin	* 36 weeks LMWH	* Delivery.
* Risk of Thrombosis	*	LMWH	All over till	* Delivery.
* Risk of Teratogenicity	*	Warfarin All over till		* Delivery

Ventricular Septal defect (VSD)

Causes:
- Congenital (Down).
- Myocardial Infarction
- Iatrogenic
- Trauma.

Clinical Findings:
- Cyanosis if Eisenmenger's develops.
- Low pulse volume.
- Displace. hyperdynamic (Thrusting Apex
- Normal S_1 S_2
- Lt parasternal Syst. thrill
- Harsh pansystolic murmur on Lt lower sternal edge radiating Allover the pericardium.
- Signs of PHTN
- Signs of CHF

Complications of VSD:
1. pulmonary HTN & Eisenmenger's.
2. LVH
3. RVH
4. CHF
5. paradoxal Embolism
6. 2ry polycythemia.
7. I.E

Investigation for VSD:
- ECHO with Doppler
- X-ray → Lung plethora & Cardiomegaly
- ECG → RVH, LVH

Indications for closure (Percutaneous, transcatheter closure):
- if pul. B.F > 2½ of the systolic Bl. flow.

complicated VSD
- Congenital → if affecting growth or causing CHF
- if Associated with AR

Infective Endocarditis (IE):

Criteria of Diagnosis of IE:

* Modified Duke's Criteria
  - 2 major Criteria.
  - or 1 major & 3 minor.
  - 5 major Criteria.

- Major Criteria:
  1. +ve Blood Culture with Typical organisms.
  2. Evidence of Endocardial involvement by ECHO (Intracardiac Mass, New murmur, Abscess).
- Minor Criteria:
  - Risk patient (Cardiac lesion before, recreation drug usage)
  - Fever > 38°C.
  - Embolism evidence.
  - Immunological problems (GN, Osler's nodes, Roth's spots & Rheumatic factor)
  - +ve blood C/S with Atypical organisms.

Investigations for IE:

- ECHO TTE 1st then TOE → vegetations
- Blood C/S → 3 sample, 3 diff. sites & one hour apart.
- Rheumatic factor
- Urinalysis for blood & proteins.

Treatment of I.E:

- IV antibiotics according to protocol (Empirical) & according to Blood C/S.

*** Metallic Valve ***

AVR → Metallic click S_2

MVR → Metallic click S_1

* Follow up Investigations:-

1. Basic Investigation
2. INR
3. CXR
4. ECHO

* Treatment of Metallic valve:-

- Anticoagulation (Warfarin) → Follow up INR & Echo (TEE)
- prophylaxis of I.E (in high risk patient & high risk operation)
- Treatment of H.F

** Metallic valve with new Murmur **

Aort. Valve **Mitral Vd.**

ESM
- function
- pannus
- mismatch

Early diastolic
- I.E
- dehescense
- leakage